REMARKS

In accordance with the examiner's comments, applicants have previously stated how the claims avoid the prior art. Namely, the prior art cited, WO 98/06682 does not anticipate the present invention under 35 U.S.C. 102(b) or 103(a) because each of claims 3 and 13-33 have either inherent or explicit support in the priority application (U.S. application serial no. 08/695,954) filed on August 12, 1996. As such, WO 98/06682 having the same priority date as the present application simply does not qualify as prior art.

Specifically, each claim has at least the following support in U.S. application serial no. 08/695,954:

Claim 3	Equations 1 and 2; page 4 lines 1-22; in the Examples; Inherent in the art.
Claim 13	Equations 1 and 2; page 4 lines 1-22; in the Examples; Inherent in the art; Inherent as indicated on page 1, lines 27-34.
Claim 14-18	Equations 1 and 2; page 4 lines 1-22; in the Examples; Inherent in the art; Inherent as indicated on page 1, lines 27-34.
Claims 21-33	Equations 1 and 2; page 4 lines 1-22; in the Examples; Inherent in the art. Inherent as indicated on page 1, lines 27-34.

Applicants further appreciate the examiner's comments relative to *In re Lukach* and *In re DeSeversky*. Applicants understand the cases to represent the proposition that mere mentioning of a reference does not affirmatively incorporate that reference within the subject application. Applicants nevertheless believe that the breadth of the present application is at least the breadth of the priority application relied upon and that all claims as given above have a priority basis in the parent application. The examiner alludes to the idea that the present application is narrower than the priority application. Applicants respectfully traverse this assertion, for as stated above, the application enjoys priority from the priority application not only given the explicit support given above, but also given the inherent support by what was known in the art at the time of filing the parent application. A Declaration Under 37 C.F.R. 1.132 is included herewith in support thereof. Applicants have augmented the parent application to further describe the invention, but still understand the earlier invention to contain the requisite subject matter for priority purposes of the present invention.

Applicants appreciate the comments of the Examiner relative to MPEP 2133.01. Nevertheless, applicants would still cite MPEP 2133.01 and *Paperless Accounting v. Bay Area Rapid Transit System* also cited therein. That case stands for the proposition that a CIP may be rejected by its priority document if the claims in the CIP do not have support in the priority document or parent application. As stated above, applicants believe the opposite is true in the present application and therefore respectfully traverse the examiner's rejections on that basis.

The examiner is correct that the current specification adds more details, but these details further describe the invention. Applicants have always maintained that the parent application, U.S. Patent Application Serial No. 08/695,954 filed on August 12, 1996 sufficiently enables one of ordinary skill in the art given that its written description complies with 35 U.S.C. 112 first paragraph. Applicants therefore do not concede lack of priority simply by virtue of adding further description. The Declaration Under 37 C.F.R. 1.132 is presented in support of the

notion that one of ordinary skill in the art had been enabled to practice the claimed invention as of August 12, 1996, particularly given that the written description of U.S. Patent Application Serial No. 08/695,954 confirmed that the inventor had possession of the invention as now claimed.

Applicants have earnestly attempted to respond to the pending office action and would appreciate a call from the examiner should further clarification be desired. Accordingly, applicants respectfully traverse the rejections of claims 3 and 13-33 and request the examiner's reconsideration thereof. For each pending claim has support in the parent application, thereby obviating the 102(b) and 103(a) rejections predicated on WO 98/06682 and nullifying the same as a prior art reference. The rejections under 35 U.S.C. 102(e), or in the alternative under 35 U.S.C. 103(a), as obvious over Blomquist '104 are traversed for the same reason; namely, the priority document precedes this reference therefore nullifying Blomquist as a prior art reference. Similarly, the rejections under 35 U.S.C. 102(b), or in the alternative under 35 U.S.C. 103(a) as obvious over MacLaren et al. are also traversed for the priority document precedes this reference therefore nullifying MacLaren as a prior art reference. The examiner's rejections under Poole '588, Highsmith et al. '014, Poole et al. '272, and Hurley et al. have been addressed in prior office actions relative to U.S. Patent Application Serial No. 08/695,954, the discussions of which are herein incorporated by reference. In essence, neither of these references when taken alone or in combination responds to the limitations of the claims as drafted, nor do they recognize the present solution (as claimed) to reducing higher nitrogen oxide concentrations.

The examiner has rejected claims 2, 15, 18, and 21-33 under the judicially created doctrine of obviousness type double patenting as being unpatentable over the claims of U.S. Patents No. 6,306,232 and 6,074,502. Neither of these patents responds to the problem of reducing excessive nitrogen oxides as defined in the present claims, namely heterogeneous or separate SNCR agents dispersed about the gas generant composition. Furthermore, both of these patents have filing dates that post date the filing date of the priority document, thereby

nullifying them as prior art references.

With regard to the examiner's rejection of claims 3, 13-18, and 21-33 under 35 U.S.C. 112 first paragraph, the discussion given above relative to the use of the priority document equally applies to the present specification and is incorporated herein by reference. The examiner's attention is directed to the Declaration Under 37 C.F.R. 1.132 in further support of the notion that the present specification as well as the priority document both enable one of ordinary skill in the art to practice the invention without undue experimentation. The claims have been amended relative to the parameters of the SNCR added, including amounts relative to the amount of nitrogen oxides produced by the respective gas generant compositions.

Finally, Applicants are uncertain for the basis of the examiner's requirement that claims 14 and 17 be cancelled as adding new matter to the specification as originally filed. Claims 14 and 17 have inherent support on page 1, line 30 wherein the composition there claimed is found in U.S. Patent Nos. 5,139,588 and 5,035,757, both incorporated by reference into the present application.

Applicants have not calculated an additional fee to be due in connection with this paper as the one-month period of response has not expired. If the Applicants can be of any further assistance, the examiner is invited to contact the undersigned at the number given below. The undersigned takes this opportunity to point out the change of address as given below and also, as filed in the Correspondence Change of Address on May 25, 2004.

Respectfully submitted,

Date 8/4/04

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IN THE UNITED STATES PATENT
AND TRADEMARK OFFICE

Group Art Unit 3641
Examiner Edward A. Miller

Sean P. Burns, et al.

DECLARATION UNDER 37 C.F.R. 1.132

Serial No. 09/638,606

Filed August 15, 2000

For: SELECTIVE NON-CATALYTIC REDUCTION (SNCR) OF TOXIC GASEOUS EFFLUENTS IN AIRBAG INFLATORS

August 21, 2003

Commissioner for Patents
Alexandria, VA 22313

Sir:

Responsive to the Office Action mailed April 21, 2003 (Paper #10), Applicant respectfully traverses the present rejections. Accordingly, Applicant presents the following declaration filed pursuant to 37 C.F.R. 1.132.

DECLARATION UNDER 37 C.F.R. 1.132

I, Graylon K. Williams, am currently the Chief Chemist for AUTOMOTIVE SYSTEMS LABORATORY, INC., the current assignee of the above-referenced case. I have worked with technologies related to gas generant compositions and propellant technology since 1991. I have been employed by AUTOMOTIVE SYSTEMS LABORATORY, INC. since 1997 where my efforts have been concentrated on development of gas generant compositions within vehicle occupant restraint or protection systems.

I received a Bachelor's of Science in ACS Chemistry from the University of Central Oklahoma in 1989. I next received a Masters of Chemistry from the University of Delaware in 1993. Finally, I completed a Ph.D. degree in Chemistry from the University of Delaware in 1996. I have been involved with gas generant and propellant chemistry since 1991 given that my graduate work in both the Masters and Ph.D. programs emphasized gas generant combustion

and propellant chemistry. Funding sources included Thiokol, the U.S. Navy, the U.S. Air Force, and others. See the Curriculum Vitae included herewith.

With regard to the above-referenced case, I attest to the following:

1. I have reviewed the parent application filed August 12, 1996 having U.S. Application Serial No. 08/695,954. Each comment below is given in the context that the respective subject matter appears in the parent application.

2. With regard to the use of the term "nonazide" and its use in conjunction with "gas generant compositions within vehicle occupant protection systems", it has been well known since prior to August 12, 1996 what gas generant compositions would be included within the generic group of "nonazide gas generant compositions within vehicle occupant protection systems". U.S. Patent Nos. 5,035,757, 5,139,588, 5,514,230, 5,460,668, and 5,531,941 typify and exemplify (but do not limit) known "nonazide gas generant compositions for use within vehicle occupant protection systems" as of August 12, 1996. I have reviewed the state of the technology prior to August 12, 1996 and conclude that one of ordinary skill in the gas generant art *at that time* would be well advised as to the meaning of "nonazide", and also as to what nonazide gas generant compositions would be contemplated and known for their utility within a vehicle occupant protection system.

3. I have also reviewed the parent application and the art with regard to the abbreviation or term NO_x. I conclude that one of ordinary skill in the gas generant art as of August 12, 1996 would recognize that term to include nitrogen oxides that are produced upon combustion of "nitrogen-containing gas generant compositions". I further conclude one of ordinary skill in the art would have recognized that based on the expected and confirmed chemistry during combustion of these compositions, the nitrogen oxides that would be produced include but are not limited to nitrogen oxide and nitrogen dioxide. Furthermore, one of ordinary skill in the art would have understood that the nonazide gas generant compositions characterized and claimed in the parent application would necessarily contain nitrogen given that the absence of nitrogen would

preclude NO_x production thereby obviating the need of the SNCR agent. In essence, during gas generant combustion no NO_x production would occur due to atmospheric nitrogen, for example. See page 2, lines 5-11 and page 4, lines 19-30 for example, in the parent application.

4. I have also reviewed the parent application and the art with regard to the radical or chemical intermediate NH_2. I conclude that one of ordinary skill in the gas generant art as of August 12, 1996 would have recognized and understood that NH_2 is produced upon decomposition of the selective non-catalytic reducing agent during the combustion reaction of the nitrogen-containing nonazide gas generant composition. One of ordinary skill in the art would also understand that although the NH_2 radical exists in the gas phase when a SNCR agent is employed, it would ultimately react with NO_x (e.g. NO and/or NO_2) as given in equations 1 and 2, when a nitrogen-containing nonazide gas generant composition is also employed in the vehicle occupant protection system. Therefore, as best understood at the time of filing of the parent application, one of ordinary skill would understand that NH_2 is produced as a radical upon decomposition of the SNCR agent and then reacts with the NO_x in the gas phase to produce nitrogen and water as ultimate combustion products.

5. I have also reviewed the parent application with regard to the chemical equations therein. As readily understood by one of ordinary skill in the art, I conclude that the chemical reactions combined with the text indicate that <u>any</u> nitrogen-containing gas generant composition suitable for use within a vehicle occupant protection system may be employed provided that NO_x is produced upon combustion of the gas generant. Additionally, one of ordinary skill in the art would readily understand that upon combustion of the gas generant composition, one mol of NO_x would be reacted with one mol of NH_2 or one mol of NH_3 depending on the equilibrium conditions at any given moment of the combustion reaction. See chemical equations numbered 1 and 2.

6. Based on comment "5" directly above, one of ordinary skill in the art would have understood as of August 12, 1996 that given any gas generant composition that is known to produce a certain amount of NO_x, for every mol of NO_x produced, at least one mol of NH_2 or NH_3 would be

necessary to reduce the NO_x. See equations numbered 1 and 2 and also see Example 2.

7. Relative to comments "5" and "6" directly above, when marketing a gas generant composition for use within a vehicle occupant protection system, customer requirements mandate quantification of the various gaseous species produced from combustion of any given gas generant composition, particularly within vehicle occupant protection systems. These requirements predate August 12, 1996. Furthermore, the limits on any given combustion product or species would be defined by the customer thereby indicating what instances for example, would require reduction of NO_x. Accordingly, one of ordinary skill in the art would readily know what species were produced from any given gas generant composition, and in what amounts, prior to determining whether or not to add a SNCR agent in the molar amounts defined in reactions 1 and/or 2.

8. Based on the above, it is my opinion that one of ordinary skill in the art upon reading the parent application would readily understand when to practice the invention defined in the parent application. Stated another way, when advised of the amounts of NO_x as predetermined by customer requirements, one of ordinary skill in the art would know what amount of SNCR agent to apply in heterogeneous relation to the gas generant composition, thereby reducing the amount of nitrogen oxides produced upon combustion of the gas generant composition. Accordingly, when employing a nitrogen-containing gas generant composition, one of ordinary skill in the art (in possession of laboratory data mandated by customer requirements) would know when application of a SNCR agent would be required. Excessive or undue experimentation would not be required because criteria necessary to evaluate the need of SNCR technology would already be developed. In essence, only review of available data would be necessary. Accordingly, as of August 12, 1996 the applicants of the above-referenced application sufficiently enabled one of ordinary skill in the art to make, use, and practice the invention particularly in view of: the examples and the chemical equations in the specification, the related art, the state of the art, and what was known to one of ordinary skill in the art at the time.

9. I have reviewed the parent application with regard to the difficulty of reducing NO_x concentration in gas generator effluent gases. I conclude that one of ordinary skill in the art would readily agree that various factors in the design of the vehicle occupant protection system, such as inflator design, gas generant composition, and/or temperature regime throughout the inflator, (e.g. see the Examples) would affect the amount of NO_x or other species produced. Nevertheless, the Examples indicate that regardless of these factors, NO_x reduction is still accomplished by addition of an SNCR agent.

10. It should be emphasized that a certain amount of experimentation is required to address the customer requirements given above. Accordingly, any present or future gas generant compositions requiring the use of the SNCR technology would be readily apparent without the need for additional or undue experimentation.

11. I have reviewed the parent application with regard to the term "heterogeneous" as applied to the spatial relationship between the gas generant composition and the selective non-catalytic reducing agent. The ordinary meaning of the term is applicable, that is, the gas generant composition and the SNCR agent are separate compositions existing separate from each other. The term **"composition"** is also revealing in that it is defined by Webster to mean, "a product of mixing or combining various elements or ingredients". Accordingly, two heterogeneous compositions may also be stated to be two heterogeneous mixtures or two heterogeneous combinations. **"Heterogeneous"** is defined to mean, "1. different in kind; unlike; incongruous; 2. composed of parts of different kinds; having widely dissimilar elements or constituents; not homogeneous." **"Homogeneous"** is defined to mean, "1. of the same or a similar kind or nature; 2. of uniform structure or composition throughout."

12. It follows then that when the term **"heterogeneous"** is applied to the spatial relationship between the gas generant composition and the SNCR agent, it cannot be construed to mean a **uniform** mixture of a granulated oxidizer (e.g. potassium nitrate) and a granulated ammonium salt. When formulating a gas generant composition for a vehicle occupant protection

system, it is known and accepted that the gas generant composition must be of uniform structure and composition throughout (e.g. **homogeneous**). Therefore, if for the sake of argument potassium nitrate is accepted as a viable gas generant composition within a vehicle occupant protection system, heterogeneous distribution of the SNCR agent throughout the potassium nitrate granules would constitute a practice of the present invention; homogeneous distribution would form a homogeneous composition between potassium nitrate and the SNCR agent, not two heterogeneous compositions as required in the present invention.

13. As would have been known to one of ordinary skill in the art as of August 12, 1996, a gas generant composition in a vehicle occupant protection system includes at least a fuel and an oxidizer for a complete system. Potassium nitrate is an oxidizer and therefore represents only a portion of the gas generant composition. A gas generant composition would not only contain the oxidizer, but it would also contain a fuel to be a complete system. As such, a gas generant composition for use within a vehicle occupant protection system is defined by all of its constituents, not by one of its constituents such as the oxidizer.

14. In sum, after review of the parent application I conclude that one of ordinary skill in the art, in view of the prior art and in view of industry practice, would realize and understand how to make, use, and practice the invention as described in the parent application. Stated another way, one of ordinary skill in the art would know what nitrogen-containing gas generant compositions would be found within the scope of the invention characterized in the parent application and would also know at what point the SNCR technology described would be necessary. Additionally, one of ordinary skill in the art would be able to determine the amounts of SNCR agent required to reduce the nitrogen oxides given the laboratory data available due to customer requirements and given the equations numbered 1 and 2 as defined in the parent application.

Further declarant sayeth not.

Graylon K. Williams 21 Aug 03
Chief Chemist
Automotive Systems Laboratory, Inc.

Respectfully submitted,

Date 8/21/03

By

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Curriculum Vitae of Graylon K. Williams

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EDUCATION:

Ph.D. Inorganic Chemistry University of Delaware, October 1996. Advisor: Dr. Thomas B. Brill. Dissertation Title: "Kinetic and Mechanistic Decomposition Studies on Advanced Energetic Materials."

M.S. Chemistry University of Delaware, May 1993. Advisor: Dr. Thomas B. Brill. Thesis Title: "Synthesis, Characterization, and Thermolysis of Triazole Metal Complexes."

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